

What is claimed is:

1. A method for estimating man-hours and costs to complete a certification of a modification to a system, the method comprising:
 - entering one or more components that require certification activity based on the modification;
 - based on the entered one or more components, automatically identifying other components that require certification activity based on the entered one or more components;
 - identifying scope of work needed to complete certification for each of the entered and identified components;
 - determining if the entered and identified components and the associated scopes of work apply to the modification; and
 - generating an estimate of man-hours and costs needed to complete certification based on all of the determined scopes of work.
2. The method of Claim 1, wherein each scope of work comprises one or more methods of compliance to be performed in order to satisfy one or more government regulations associated with the component.
3. The method of Claim 2, wherein the one or more methods comprises at least one of testing, demonstrating, simulating, analyzing, or inspecting.
4. The method of Claim 2, wherein the government regulations are one of federal aviation regulation or joint aviation requirement.
5. The method of Claim 1, wherein determining comprises supplying queries to a user, wherein the queries relate to applicability of an associated component.
6. The method of Claim 5, wherein the queries are at least one of a physical, spatial, functional, or safety query.
7. The method of Claim 1, wherein the system is an aircraft, wherein entering comprises entering aircraft model type affected by the modification, and wherein identifying is further based on the entered aircraft model type.

8. The method of Claim 1, further comprising identifying any certification deliverables based on the determined applicable components and associated scopes of work.

5 9. The method of Claim 8, wherein identifying further comprises identifying government forms associated with the identified deliverables.

10 10. A computer-based apparatus for estimating man-hours and costs to complete a certification of a modification to a system, the apparatus comprising:

- 10 a means for entering one or more components that require certification activity based on the modification;
- 15 a means for automatically identifying other components that require certification activity based on the entered one or more components;
- a means for identifying scope of work needed to complete certification for each of the entered and identified components;
- a means for determining if the entered and identified components and the associated scopes of work apply to the modification; and
- a means for generating an estimate of man-hours and costs needed to complete certification based on all of the determined scopes of work.

20 11. The apparatus of Claim 10, wherein each scope of work comprises one or more methods to be performed in order to satisfy one or more government regulations associated with the component.

25 12. The apparatus of Claim 11, wherein the one or more methods comprises at least one of testing, demonstrating, simulating, analyzing, or inspecting.

13. The apparatus of Claim 11, wherein the government regulations are one of federal aviation regulation or joint aviation requirement.

30 14. The apparatus of Claim 10, wherein determining comprises supplying queries to a user, wherein the queries relate to applicability of an associated component.

35 15. The apparatus of Claim 14, wherein the queries are at least one of a physical, spatial, functional, or safety query.

16. The apparatus of Claim 10, wherein the system is an aircraft, wherein the means for entering comprises a means for entering aircraft model type effected by the

modification, and wherein the means for identifying identifies further based on the entered aircraft model type.

17. The apparatus of Claim 10, further comprising a means for identifying any certification deliverables based on the determined applicable components and associated scopes of work.

18. The apparatus of Claim 17, wherein the means for identifying any certification deliverables further comprises a means for identifying government forms associated with the identified deliverables.

19. A computer program product for estimating man-hours and costs to complete a certification of a modification to a system, the product comprising:

- 15 a component configured to receive entry of one or more components that require certification activity based on the modification;
- a component configured to automatically identify other components that require certification activity based on the entered one or more components;
- a component configured to identify scope of work needed to complete certification for each of the entered and identified components;
- 20 a component configured to allow a user to determine if the entered and identified components and the associated scopes of work apply to the modification; and
- a component configured to generate an estimate of man-hours and costs needed to complete certification based on all of the determined scopes of work.

20. The product of Claim 19, wherein each scope of work comprises one or more methods to be performed in order to satisfy one or more government regulations associated with the component.

30 21. The product of Claim 20, wherein the one or more methods comprises at least one of testing, demonstrating, simulating, analyzing, or inspecting.

35 22. The product of Claim 20, wherein the government regulations are one of federal aviation regulation or joint aviation requirement.

23. The product of Claim 19, wherein the component configured to allow a user to determine comprises a component configured to supply queries to a user, wherein the queries relate to applicability of an associated component.

5 24. The product of Claim 23, wherein the queries are at least one of a physical, spatial, functional, or safety query.

10 25. The product of Claim 19, wherein the system is an aircraft, wherein the component configured to receive an entry comprises a component configured to receive an entry of aircraft model type effected by the modification, and wherein the component configured to identify is further configured to identify based on the entered aircraft model type.

15 26. The product of Claim 19, further comprising a component configured to identify any certification deliverables based on the determined applicable components and associated scopes of work.

20 27. The product of Claim 26, wherein the component configured to identify any certification deliverables further comprises a component configured to identify government forms associated with the identified deliverables.

25 28. An estimating system for estimating man-hours and costs to complete a certification of a modification to a complex system, the system comprising:

a database configured to store an estimating application program and related information;
a server coupled to the database, the server comprising a processor configured to generate a interface tool by executing the stored estimating application program; and

30 one or more computer-based user devices in communication with the server over a network connection, the one or more computer-based user devices comprising:

a user interface device configured to present the interface tool, and allow a user to enter one or more components that require certification activity based on the modification;

35 wherein the estimating application program comprises:

a means for automatically identifying other components that require certification activity based on the entered one or more components and related information stored in the database;

5 a means for identifying scope of work needed to complete certification for each of the entered and identified components based on the related information stored in the database; and

a means for generating an estimate of man-hours and costs needed to complete certification based on user approved scopes of work.

10 29. The estimating system of Claim 28, wherein each scope of work comprises one or more methods to be performed in order to satisfy one or more government regulations associated with the component.

15 30. The estimating system of Claim 29, wherein the one or more methods comprises at least one of testing, demonstrating, simulating, analyzing, or inspecting.

20 31. The estimating system of Claim 29, wherein the government regulations are one of a federal aviation regulation or a joint aviation requirement.

25 32. The estimating system of Claim 28, wherein interface tool comprises queries, wherein the queries relate to applicability of an associated component.

30 33. The estimating system of Claim 32, wherein the queries are at least one of a physical, spatial, functional, or safety query.

35 34. The estimating system of Claim 28, wherein the system is an aircraft, wherein the interface tool comprises a means for entering aircraft model type effected by the modification, and wherein the means for identifying identifies further based on the entered aircraft model type.

40 35. The estimating system of Claim 28, wherein the estimating application program further comprises a means for identifying certification deliverables based on the determined applicable components and associated scopes of work.

45 36. The estimating system of Claim 35, wherein the means for identifying any certification deliverables further identifies government forms associated with the identified deliverables.

50 36. The estimating system of Claim 35, wherein the related information stored in the database comprises information regarding how changes to components affect certification

requirements to other components, regulatory information, and information regarding methods of work required to meet certification requirements.

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